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Yilmaz

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(54) **TWO-DIMENSIONAL POSITION SENSOR**

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See application file for complete search history.

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(57) **ABSTRACT**

A two dimensional position sensor having a touch-sensitive panel defined by a single-layer electrode pattern arranged on one side of a substrate. The electrode pattern is made up of 'n' electrode units extending row-wise over the panel. Each electrode unit is made up of a single drive electrode extending across the touch-sensitive area of the panel and a plurality of 'm' sense electrodes, which collectively laterally extend across the touch-sensitive area and individually each occupy only a portion of the lateral extent. The sense electrodes are longitudinally offset from their associated drive electrode so that one edge of each sense electrode lies adjacent to one edge of the drive electrode, these coupling edges being separated by a gap dimensioned so that in use each pair of drive and sense electrodes have efficient capacitively coupling across the gap. This electrode pattern allows the longitudinal extent of each electrode unit to be made relatively small, which in turn is better for sensing multiple simultaneous touches, since this benefits from having more electrode units in any given panel.

22 Claims, 11 Drawing Sheets